

IN THE CLAIMS:

- 1 1. (Previously amended) An electronic device, comprising a sensor sensitive to
2 position of a material, said sensor comprising a single coil inductance transducer,
3 a temperature measurement circuit for providing a temperature output derived
4 from said sensor, a position measuring circuit for measuring position of said
5 material, and a voltage controlled gain adjusting device, wherein said temperature
6 measurement circuit provides a voltage proportional to temperature to said voltage
7 controlled gain adjusting device to adjust output voltage of said position
8 measuring circuit to provide temperature compensated sensor data, wherein said
9 temperature measurement circuit uses a signal derived from resistance of said
10 single coil inductance transducer to provide said voltage proportional to
11 temperature.
- 1 2. (Previously amended) The electronic device as recited in claim 1, wherein said
2 material comprises a magnetically permeable member, wherein said magnetically
3 permeable member is moveable.
- 1 3. (Previously amended) The electronic device as recited in claim 2, wherein said
2 moveable magnetically permeable member is located within said single coil
3 inductance transducer.
- 1 4. (Cancel)
- 1 5. (original) The electronic device as recited in claim 1, wherein said sensor is a
2 displacement sensor.

- 1 6. (original) The electronic device as recited in claim 1, wherein said sensor
2 comprises input pads for receiving a first signal and a second signal, said first
3 signal having a higher frequency than said second signal.
- 1 7. (Cancel)
- 1 8. (Previously amended) The electronic device as recited in claim 1, wherein said
2 voltage controlled gain adjusting device comprises a variable gain amplifier or a
3 microprocessor.
- 1 9. (Previously amended) The electronic device as recited in claim 2, wherein said
2 magnetically permeable member comprises a highly permeable material.
- 1 10. (Previously amended) The electronic device as recited in claim 9, wherein said
2 highly permeable material comprises one or more from the group consisting of
3 permalloy, ferrite, and 400 series stainless steel.
- 1 11. (original) The electronic device as recited in claim 1, wherein said magnetically
2 permeable member comprises magnetoelastic characteristics.
- 1 12. (Previously amended) The electronic device as recited in claim 11, wherein said
2 magnetoelastic characteristics are modulated by one or more from the group
3 consisting of strain, stress, and torque.

- 1 13. (Previously amended) An electronic device, comprising a single coil inductance
2 transducer having a single coil and a magnetically permeable member that
3 extends in said single coil, said device further comprising a temperature
4 measurement circuit, a position measuring circuit, and a voltage controlled gain
5 adjusting device, wherein said temperature measurement circuit provides a
6 voltage proportional to temperature to said voltage controlled gain adjusting
7 device to adjust output voltage of said position measuring circuit to compensate
8 for a change in temperature in said single coil and in said member.
- 1 14. (Previously amended) The electronic device as recited in claim 13, wherein said
2 magnetically permeable member is moveable with respect to said single coil.
- 1 15. (Previously amended) The electronic device as recited in claim 13, wherein said
2 circuit uses resistance of said single coil to compensate for change in temperature
3 of said single coil and in said member.
- 1 16. (Previously amended) The electronic device as recited in claim 13, wherein said
2 single coil inductance transducer comprises a displacement sensor.
- 1 17. (Previously amended) The electronic device as recited in claim 13, wherein said
2 transducer comprises input pads for receiving a first signal and a second signal,
3 said first signal having a higher frequency than said second signal.
- 1 18. (Cancel)
- 2 19. (Previously amended) The electronic device as recited in claim 13, wherein said
3 voltage controlled gain adjusting device comprises a variable gain amplifier or a
4 microprocessor.

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1 20. (original) The electronic device as recited in claim 13, wherein said magnetically
2 permeable member comprises a highly permeable material.

1 21. (Previously amended) The electronic device as recited in claim 20, wherein said
2 highly permeable material comprises one or more from the group consisting of
3 permalloy, ferrite, and 400 series stainless steel.

1 22. (original) The electronic device as recited in claim 13, wherein said magnetically
2 permeable member comprises magnetoelastic characteristics.

1 23. (Previously amended) The electronic device as recited in claim 22, wherein said
2 magnetoelastic characteristics are modulated by one or more from the group
3 consisting of strain, stress, or and torque.

1 24. (Previously amended) An electronic device, comprising a single inductor, a
2 member coupled to said single inductor, a temperature measurement circuit, an
3 inductance measuring circuit, and a voltage controlled gain adjusting device,
4 wherein said temperature measurement circuit provides a voltage proportional to
5 temperature to said voltage controlled gain adjusting device to adjust output
6 voltage of said inductance measuring circuit to provide an adjusted output voltage
7 independent of temperature of said single inductor and temperature of said
8 member.

1 25. (Previously amended) The electronic device as recited in claim 24, wherein said
2 member is moveable with respect to said inductor.

1 26. (Previously amended) The electronic device as recited in claim 24, wherein said
2 circuit uses resistance of said single inductor to compensate for change in
3 temperature of said single inductor and in said member.

- 1 27. (Previously amended) The electronic device as recited in claim 24, wherein said
2 single inductor, said member and said circuit comprise a sensor.
- 1 28. (Previously amended) The electronic device as recited in claim 27, wherein said
2 single inductor, said member and said circuit comprise a displacement sensor.
- 1 29. (Previously amended) The electronic device as recited in claim 28, wherein said
2 sensor comprises input pads for receiving a first signal and a second signal, said
3 first signal having a higher frequency than said second signal.
- 1 30. (Cancel)
- 1 31. (Previously amended) The electronic device as recited in claim 24, wherein said
2 voltage controlled gain adjusting device comprises a variable gain amplifier or a
3 microprocessor.
- 1 32. (Currently amended) The electronic device as recited in claim 24, wherein said
2 member comprises a highly magnetically permeable material.
- 1 33. (Currently amended) The electronic device as recited in claim 32, wherein said
2 highly magnetically permeable material comprises one or more from the group
3 consisting of permalloy, ferrite, and 400 series stainless steel.
- 1 34. (Previously amended) The electronic device as recited in claim 24, wherein said
2 member comprises magnetoelastic characteristics.

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1 35. (Previously amended) The electronic device as recited in claim 34, wherein said
2 magnetoelastic characteristics are modulated by one or more from the group
3 consisting of strain, stress, and torque.

1 36-52. (Cancel)

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1 53. (Previously amended) A device comprising a single component, a temperature
2 measurement circuit, a first parameter measuring circuit for measuring a value of
3 said single component, and a voltage controlled gain adjusting device, wherein
4 said temperature measurement circuit provides a voltage proportional to
5 temperature to said voltage controlled gain adjusting device to adjust output
6 voltage of said first parameter measuring circuit to make adjusted output voltage
7 of said first parameter measuring circuit independent of change in temperature
8 with time.

1 54. (Cancel)

1 55. (Previously amended) A circuit as recited in claim 53, wherein said single
2 component comprises a single inductor.

1 56. (Cancel)

1 57. (Previously amended) A circuit as recited in claim 55, wherein said single
2 inductor has a magnetically permeable core.

1 58. (previously presented) The electronic device as recited in claim 57, wherein said
2 magnetically permeable core has a core length and said single inductor has a
3 single inductor length, wherein said core length is about equal to said single
4 inductor length.

1 59. (Previously amended) The electronic device as recited in claim 53, wherein said
2 voltage controlled gain adjusting device comprises a variable gain amplifier or a
3 microprocessor.

1 60. (previously presented) The electronic device as recited in claim 53, further
2 comprising a lower frequency power supply and a higher frequency power supply
3 connected to provide a lower frequency and a higher frequency signal to said
4 single component.

1 61. (previously presented) The electronic device as recited in claim 60, wherein said
2 lower frequency power supply provides direct current.

1 62. (previously presented) The electronic device as recited in claim 53, further
2 comprising a low pass filter and a high pass filter, each connected to receive an
3 output of said single component.

1 63. (previously presented) The electronic device as recited in claim 53, further
2 comprising a demodulator positioned after said high pass filter.

1 64. (previously presented) The electronic device as recited in claim 53, further
2 comprising a difference amplifier connected to receive said low frequency signal
3 output from said coil, wherein said difference amplifier provides a voltage
4 proportional to a temperature of said coil.

1 65. (previously presented) The electronic device as recited in claim 64, wherein said
2 difference amplifier comprises an instrumentation amplifier.

1 66. (previously presented) The electronic device as recited in claim 53, further
2 comprising a span adjustment circuit.

1 67. (previously presented) The electronic device as recited in claim 66, wherein said
2 span adjustment circuit comprises a variable gain amplifier.

- 1 68. (previously presented) The electronic device as recited in claim 66, wherein said
2 span adjustment circuit comprises a microprocessor.
- 1 69. (Previously amended) The electronic device as recited in claim 3, wherein said
2 member has a member length and said single coil has a single coil length, wherein
3 said member length is about equal to said single coil length.
- 1 70. (Previously amended) The electronic device as recited in claim 13, wherein said
2 member has a member length and said single coil has a single coil length, wherein
3 said member length is about equal to said single coil length.
- 1 71. (Previously amended) The electronic device as recited in claim 24, wherein said
2 magnetically permeable member has a member length and said single inductor has
3 a single inductor length, wherein said member length is about equal to said single
4 inductor length.
- 1 72. (Previously amended) The electronic device as recited in claim 1, wherein said
2 material includes one or more from the group consisting of a conductive material
3 and a ferrous material.
- 1 73. (Previously amended) The electronic device as recited in claim 1, wherein said
2 single coil and said material are non-contacting and wherein said position
3 measuring circuit measures relative position of said single coil and said material.
- 1 74. (previously presented) The electronic device as recited in claim 72, wherein said
2 material has magnetoelastic characteristics.

- 1 75. (Previously amended) The electronic device as recited in claim 1, wherein said
2 sensor comprises one or more from the group consisting of a displacement sensor,
3 a force sensor, an acceleration sensor, a pressure sensor, and a torque sensor.
- 1 76. (previously presented) The electronic device as recited in claim 1, wherein said
2 sensor further comprises a flexure element.
- 1 77. (New) The electronic device as recited in claim 24, wherein said member
2 comprises a conductive material.
- 1 78. (New) The electronic device as recited in claim 24, wherein said member
2 comprises a magnetoelastic material.
- 1 79. (New) The electronic device as recited in claim 24, wherein said member
2 comprises a target.
- 1 80. (New) The electronic device as recited in claim 79, wherein said single inductor
2 and said target are parts of a non-contacting position sensor.
- 1 81. (New) The electronic device as recited in claim 79, wherein said target material
2 exhibits magnetoelastic characteristics.
- 1 82. (New) The electronic device as recited in claim 81, wherein said single inductor
2 and said target are parts of at least one from the group consisting of a non-
3 contacting strain sensor, a non-contacting stress sensor, and a non-contacting
4 torque sensor.

1 83. (New) The electronic device as recited in claim 55, further comprising a
2 conductive material, wherein said single inductor is coupled to said conductive
3 material.

1 84. (New) The electronic device as recited in claim 55, further comprising a
2 magnetoelastic material, wherein said single inductor is coupled to said
3 magnetoelastic material.

1 85. (New) The electronic device as recited in claim 55, further comprising a target.

1 86. (New) The electronic device as recited in claim 86, wherein said single inductor
2 and said target are parts of a non-contacting position sensor.

1 87. (New) The electronic device as recited in claim 86, wherein said target material
2 exhibits magnetoelastic characteristics.

1 88. (New) The electronic device as recited in claim 88, wherein said single inductor
2 and said target are parts of at least one from the group consisting of a non-
3 contacting strain sensor, a non-contacting stress sensor, and a non-contacting
4 torque sensor.